

### REMARKS

Claims 4, 7, 20 and 21 are currently pending in the application. For the reasons set forth below, Applicant believes that the rejections should be withdrawn and that Claims 4, 7, 20 and 21 are in condition for allowance.

#### REJECTION OF CLAIMS 4, 7, 20 AND 21 UNDER 35 U.S.C. 103(a)

The Examiner rejected Claims 4, 7, 20 and 21 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,532,585 to Oudet *et al.* ("Oudet") in view of U.S. Publication No. 2003/013293 to Welsch *et al.* ("Welsch"). As discussed below, this rejection is respectfully traversed.

##### Claims 4 and 7

Claims 4 and 7 define the structure of the non-contact position sensor. Claims 4 and 7 require that the non-contact position sensor includes a main stator consisting of a magnetic body having a first pair of opposed walls forming an area in which the slider enters while keeping a predetermined clearance, the first pair of opposed walls corresponding to the front and back faces of the magnet, and *a first gap continuing into the opposed walls, and a magnetically-sensitive sensor arranged in the first gap. (emphasis added).*

According to one embodiment of the present invention, as illustrated in Figure 1, the main stator 120 has a first pair of opposed walls 122, 124 and a first gap Gm continuing into the opposed walls 122, 124, and a magnetically-sensitive sensor 130 arranged in the first gap Gm. The Examiner alleged that Oudet discloses a first gap continuing into the opposed walls, and a magnetically-sensitive sensor arranged in the first gap. (*See*, Office Action, pg. 3, ll. 4-5; and pg. 4, ll. 17-18). As illustrated in Figure 1, Oudet discloses a non-contact linear position sensor with a main stator 1 having a first pair of opposed walls 4, 5 and a first (principal) gap 2 continuing into the opposed walls 4, 5 where the slider 12 enters the first (principal) gap 2, and the sensor 7 is arranged in the secondary gap 6.

Claim 4 requires that the main stator have a first pair of opposed walls with a first gap continuing into the opposed walls, and a sensor arranged in the first gap. As shown in Figure 1 of Oudet, the sensor 7 is not arranged in the first (principal) gap 2. None of the figures or

corresponding sections of Oudet, cited by the Examiner, show otherwise.

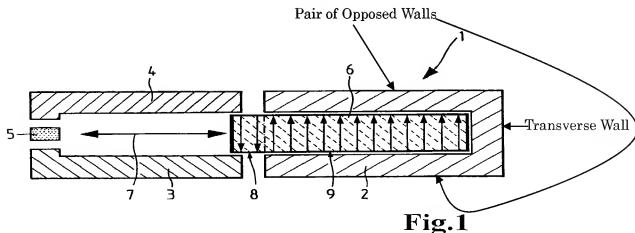
Claim 4 further defines that the non-contact position sensor includes an assist stator that has a second pair of opposed walls corresponding to front and back faces of the part of the magnet that does not enter the area and *transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls*, wherein the first and second gaps are formed uniformly along a moving direction of the slider, respectively. (*emphasis added*). Claim 7 further defines that the non-contact position sensor includes an assist stator consisting of a magnetic body having a second pair of opposed walls forming a second area which allows the slider to move while keeping a predetermined clearance and *transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls*, wherein there is a third gap between the assist stator and the main stator, and a magnetically-sensitive sensor arranged in the first gap to detect a position of the slider corresponding to a percentage of the magnet entering the first area, wherein the first and third gaps are formed uniformly along a moving direction of the slider respectively. (*emphasis added*).

The Examiner acknowledged that Oudet fails to disclose an assist stator for preventing magnetic flux, which is generated in a part of the magnet that does not enter the area, from leaking out to the main stator, wherein the assist stator has a second pair of opposed walls corresponding to front and back faces of the part of the magnet that does not enter the area and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, as required by Claim 4. The Examiner also acknowledged that Oudet fails to disclose an assist stator consisting of a magnetic body having a second pair of opposed walls forming a second area which allows the slider to move while keeping a predetermined clearance and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, wherein there is a third gap between the assist stator and the main stator, as required by Claim 7. The Examiner relied on Welsch for disclosing these structures.

According to one embodiment, as illustrated in Figure 1 of the present invention, the assist stator 140 includes a second pair of opposed walls 142, 144 forming a second area which allows the slider 110 to move while keeping a predetermined clearance and transverse walls 143, 145 extending from the second pair of opposed walls 142, 144, which are separated from each other through a second gap Ga formed between the transverse walls 143, 145.

In a previous Response filed May 22, 2008, Applicant successfully argued that Welsch did not disclose an assist stator having a second pair of opposed walls and transverse walls extending from the second pair of opposed walls which are separated from each other through a second gap formed between the transverse walls, as required by Claims 4 and 7. (See, May 22, 2008 Response, pg. 5). Applicant overcame the rejection based on Welsch and in the next Office Action issued June 18, 2008, the Examiner relied on another reference for describing the claimed assist stator.

In the current Office Action, the Examiner has failed to provide any additional reasoning as to why Welsch allegedly discloses the claimed assist stator. Relying on Figure 1 of Welsch, the Examiner alleged that Welsch discloses an assist stator 2, where the assist stator 2 has “transverse walls (not labeled) extending from the second pair of opposed walls (not labeled) which are separated from each other through a second gap formed between the transverse walls (gap between two walls).” (See, Office Action, pg. 3, ll. 18-21; and pg. 5, ll. 10-12).



As illustrated above using Figure 1 of Welsch, the assist stator 2 consists of a single transverse wall connecting the opposed walls with each other. The assist stator of Welsch does not consist of a pair of transverse walls extending from the pair of opposed walls which are separated from each other. In addition, because the single transverse wall is a continuous element, Welsch does not describe the second gap defined by Claims 4 and 7. As illustrated above, Welsch describes an area between the opposed walls of the assist stator 2, and an area between the magnet 6 and one of the opposed walls. There is no gap between a pair of transverse walls, where the transverse walls extend from a pair of opposed walls, since there is only a single transverse wall. Welsch does not describe or even suggest a gap formed between transverse walls extending from a pair of opposed walls.

A comparison of Figure 1 of the present invention with Figure 1 of Welsch illustrates the distinctions between the assist stators. The assist stator described by Welsch is not comparable to the assist stator defined by Claims 4 and 7, where the assist stator includes *transverse walls* extending from the second pair of opposed walls which are separated from each other through a second gap *formed between the transverse walls*.

Oudet in combination with Welsch does not teach nor render obvious all features or elements of Claims 4 and 7. The chart below provides an element-by-element comparison between the present invention and the cited references.

|   | <b>First Embodiment</b><br>(Fig. 1) | <b>Oudet</b><br>(Fig. 1)                  | <b>Welsch</b><br>(Fig. 1)                |
|---|-------------------------------------|---|--|
| Slider/Magnet                           | 110                                 | 3   | 6  |
| Main Stator                             | 120                                 | 1   | 3,4                                      |
| Magnetic Sensor                         | 130                                 | 7   | 5  |
| Assist Stator                           | 140                                 | Not Present                               | 2  |
| 1 <sup>st</sup> Gap<br>(in Main Stator) | Gm                                  | 2   | Not Labeled                              |
| Position of<br>Magnetic Sensor          | In 1 <sup>st</sup> Gap - Gm         | In Gap 6<br>(Not 1 <sup>st</sup> Gap - 2) | In 1 <sup>st</sup> Gap - Not<br>Labeled  |
| 2 <sup>nd</sup> Pair Opposed<br>Walls   | 142,144                             | Not Present                               | Not Labeled*                             |
| Transverse Walls<br>of Assist Stator    | 143, 145 extending from<br>142, 144 | Not Present                               | Single Transverse<br>Wall – Not Labeled* |

|  | <b>First Embodiment</b><br>(Fig. 1) | <b>Oudet</b><br>(Fig. 1) | <b>Welsch</b><br>(Fig. 1)                          |
|--|-------------------------------------|--------------------------|--|
| 2 <sup>nd</sup> Gap (in Assist Stator) | Ga                                  | Not Present              | Not Present, No gap formed between transverse wall |

\*(See annotated Fig. 1 above)

As described in the chart and discussed above in detail, Welsch does not disclose or suggest an assist stator having transverse walls extending from a pair of opposed walls which are separated from each other by a second gap formed between the transverse walls, as required by Claims 4 and 7. Accordingly, Claims 4 and 7 are patentable over Oudet in view of Welsch.

Claims 20 and 21

Claim 20 depends from Claim 4, and Claim 21 depends from Claim 7. Accordingly, for at least the same reasons discussed above, Claims 20 and 21 are patentable over Oudet in view of Welsch.

**CONCLUSION**

The foregoing is submitted as a complete response to the Office Action identified above. This application should now be in condition for allowance, and Applicant solicits a notice to that effect. The Commissioner is authorized to charge any additional fees that may be due or credit any overpayment to Deposit Account No. 11-0855. If there are any issues that can be addressed via telephone, the Examiner is asked to contact the undersigned at 404.532.6946.

Respectfully submitted,  
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